

REPORT DOCUMENTATION PAGE

AFRL-SR-AR-TR-04-

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tion

1. AGENCY USE ONLY (Leave blank)

2. REPORT DATE

3. REPORT TYPE AND DATES COVERED

15 Jul 2002 - 31 May 2003 FINAL

4. TITLE AND SUBTITLE

A WORKSHOP ON VACUUM ELECTRONICS RESEARCH FOR THE DoD

5. FUNDING NUMBERS

2301/EX

61102F

6. AUTHOR(S)

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7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

UNIVERSITY OF CALIFORNIA

SPONSORED PROGRAM 118

EVERSON HALL

DAVIS CA 95616

8. PERFORMING ORGANIZATION
REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

AFOSR/NE

4015 WILSON BLVD

SUITE 713

ARLINGTON VA 22203

10. SPONSORING/MONITORING
AGENCY REPORT NUMBER

F49620-02-1-0377

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION AVAILABILITY STATEMENT

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)

The University of California, Davis hosted the workshop and publication working group from July 27-30, 2002 at the Royal Kona Resort in Kailua-Kona, Hawaii and a March 11-13, 2003, Las Vegas, Nevada, Treasure Island. The purpose was to bring together researchers from Academia, the Air Force Research Laboratory (Phillips Site), other government scientific organizations as well as from industry, to discuss the role of Innovative Vacuum Electronics in the frontiers of microwave/millimeter wave power electronics.

20040213 106

14. SUBJECT TERMS

Innovative Vacuum Electronics and microwave/millimeter wave power electronics

15. NUMBER OF PAGES

16. PRICE CODE

17. SECURITY CLASSIFICATION
OF REPORT

UNCLASSIFIED

18. SECURITY CLASSIFICATION
OF THIS PAGE

UNCLASSIFIED

19. SECURITY CLASSIFICATION
OF ABSTRACT

UNCLASSIFIED

20. LIMITATION OF ABSTRACT

UL

Standard Form 298 (Rev. 2-89) (EG)
Prescribed by ANSI Std. Z39.18
Designed using Perform Pro, WHS/DIOR, Oct 94

DOD FINAL REPORT
U.S. Department of Defense Grant No. F49620-02-1-0377

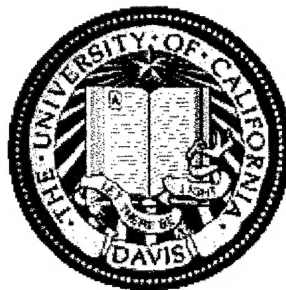


July 2003

A Workshop on Vacuum Electronics Research for the DoD

PRINCIPAL INVESTIGATOR:
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UNIVERSITY OF CALIFORNIA, DAVIS
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Department of Electrical and Computer Engineering

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The University of California, Davis hosted the workshop and publication working group from July 27-30, 2002 at the Royal Kona Resort in Kailua-Kona, Hawaii and a March 11-13, 2003, Las Vegas, Nevada, Treasure Island. The purpose was to bring together researchers from Academia, the Air Force Research Laboratory (Phillips Site), other government scientific organizations as well as from industry, to discuss the role of Innovative Vacuum Electronics in the frontiers of microwave/millimeter wave power electronics.

The meeting agenda for Hawaii was as follows:

Saturday, 27, July 2002: Overview of Book Project (Bob Barker + participants)

- Motivation & Title
- Tentative Timetable
- Roles of Editors, Chapter Masters (CMs), & Contributing Authors
- Publisher(s) and Proposal Process
- Air Force Cooperative Agreement
- Royalties
- The Book Website - Assembling the book on-line
- Artistic License for CMs and authors
- IEEE Rules for Authors
- Standards for units
- Standards for graphics

1:30 - 2:00 pm - Foreword, Preface, List of Acronyms, and INDEX (Bob Barker)

2:00 - 3:00 pm - Subject outline & perspective authors for Chapter 1 (John Booske)
"Introduction and Overview"

3:00 - 4:00 pm - Subject outline & perspective authors for Chapter 2 (Neville Luhmann)
"Historical Highlights, Applications, and Trends"

4:00 - 4:30 pm - Wrap-up for DAY 1 (Neville Luhmann + participants)

Sunday, 28 July 2002

9:00 - 9:30 am - Additional thoughts about Day 1 topics (Bob Barker + participants)

9:30 - 10:30 am - Subject outline & perspective authors for Chapter 3 (John Booske)
"TWTs"

10:30 - 11:30 am - Subject outline & perspective authors for Chapter 4 (George Caryotakis)
"Klystrons"

1:00 - 2:00 pm - Subject outline & perspective authors for Chapter 5 (Gregory Nusinovich for Bruce Danly) "Gyro-Amplifiers"

2:00 - 3:00 pm - Subject outline & perspective authors for Chapter 12 (Dave Abe)
"Innovations in MVED Materials"

3:00 - 3:30 pm - Break

3:30 - 4:30 pm - Subject outline & perspective authors for Chapter 7 (Glenn Scheitrum)
"Microfabricated MVEDs"

4:30 - 5:30 pm - Subject outline & perspective authors for Chapter 8 (Jon Heritage)
"Advanced Cathodes"

5:30 - 6:00 pm - Wrap-up for Day 2 (Neville Luhmann + participants)

Monday, 29 July 2002

9:00 - 9:30 am - Additional thoughts about topics from Days 1 & 2 (Neville Luhmann)

9:30 - 10:30 am - Subject outline & perspective authors for Chapter 9 (John Booske for
Ken Kreischer) "Understanding Linearity"

10:30 - 11:30 am - Subject outline & perspective authors for Chapter 10 (Lars Ludeking)
"Computational Modeling"

11:30 - 1:00 pm - Lunch Break

1:00 - 2:00 pm - Subject outline & perspective authors for Chapter 11 (Rick Temkin)
"Next-Generation Microwave Structures & Circuits"

2:00 - 3:00 pm - Subject outline & perspective authors for Chapter 6 (Ron Gilgenbach)
"Crossed-Field Devices"

3:00 - 3:30 pm - Break

3:30 - 4:30 pm - Subject outline & perspective authors for Chapter 13 (Neville Luhmann for
Carter Armstrong) "MVE/Solid-State Hybrids"

4:30 - 5:30 pm - Subject outline & perspective authors for Chapter 14 (Don Shiffler)
"HPM Sources"

5:30 - 6:00 pm - Wrap-up for Day 3 (John Booske + participants)

Tuesday, 30 July 2002

9:00 - 10:00 am - Thoughts on "Future" for Chapter 15 (Vic Granatstein)
"Emerging Applications and Future Possibilities"

10:00 - 11:00 am - Flow of chapters - possible restructure (Neville Luhmann + participants)

11:00 - 12:00 pm - Allocation of tasks and timing for completing proposal & first draft
(Bob Barker + participants)

12:00 pm - ALOHA!

NOTE: Remaining editors and chapter masters are invited to continue to meet informally over the following days before the US-Japan Symposium starts on Sunday to finalize follow-up actions and to begin fleshing out the actual book.

The attendees were:

Dr. David K. Abe
National Research Laboratory

Prof. Thomas M. Antonsen, Jr.
IREAP

Dr. Robert J. Barker
AFOSR (NE)

Prof. John H. Booske
University of Wisconsin

Dr. George Caryotakis
Stanford Linear Accelerator Center

Prof. Ronald M. Gilgenbach
University of Michigan

Prof. Victor L. Granatstein
University of Maryland

Dr. Patrick Helles
AFRL/VSSE

Prof. Jonathan P. Heritage
University of California, Davis

Prof. Peter A. Lindsay

Queen Mary, University of London

Dr. Kendrick X. Liu
University of California, Davis

Dr. Larry D. Ludeking
Mission Research Corporation

Prof. Neville C. Luhmann, Jr.
University of California, Davis

Dr. Gregory Nusinovich
IREAP

Dr. John C. Rodgers
IREAP

Dr. John Scharer
University of Wisconsin

Dr. Glenn P. Scheitrum
Stanford Linear Accelerator Center

Dr. Donald Shiffler
Air Force Research Laboratory

Dr. Richard J. Temkin
Massachusetts Institute of Technology

The meeting agenda for the Las Vegas Workshop was as follows:

Tuesday, March 11th

9:00-9:30 AM	Overview of Book Project (Barker)
9:30-10:00 AM	Chap 1 (Booske)
10:00-10:30 AM	Chap 2 (Luhmann)
10:30-11:00 AM	Chap 4 (Booske)
11:00-11:30 AM	Chap 5 (Nusinovich for Danly)
11:30-12:00 PM	Chap 6 (Gilgenbach)

Room available till 6PM for working groups

Wednesday, March 12th

9:00-9:30 AM	Chap 3 (Caryotakis)
9:30-10:00 AM	Chap 7 (Scheitrum)
10:00-10:30 AM	Chap 8 (Umstattd)
10:30-11:00 AM	Chap 9 (Booske for Kreischer)
11:00-11:30 AM	Chap 10 (Ludeking)
11:30-12:00 PM	Chap 14 (Vanzant)

Room available until 6PM

Thursday, March 13th

8:00-9:30 AM	Chap 11 (Temkin)
9:30-10:00 AM	Chap 13 (Barker)
10:00-10:30 AM	Chapt. 12 (TBD)
10:30-11:00 AM	Chap 15 (Nusinovich for Granatstein)
11:00-12:00 PM	Overview, timetable, proposal & wrap-up

Presentations for overflow topics (web site, proposal, etc)

Room available until 6:00 PM

Attendees:

Dr. Robert J. Barker
AFOSR (NE)

Prof. John H. Booske
University of Wisconsin

Dr. George Caryotakis
Stanford Linear Accelerator Center

Prof. K.R. Chu
National Tsing Hua University, Taiwan

Prof. Ronald M. Gilgenbach
University of Michigan

Prof. Victor L. Granatstein
University of Maryland

Dr. Patrick Helles
AFRL/VSSE

Dr. A. Lin
UCLA

Dr. Larry D. Ludeking
Mission Research Corporation

Prof. Neville C. Luhmann, Jr.
University of California, Davis

Following is the Book Outline:

“Modern Microwave & MM-Wave Power Electronics”

CONTENTS **(as of 31 July 2003)**

Foreword

Preface

Acknowledgements

List of Contributors

List of Acronyms and Abbreviations

SECTION I – BACKGROUND

Chapter 1. Introduction and Overview

1.1 Setting and Motivation

1.2 Importance of Vacuum in Microwave power electronics

- Role of vacuum and solid state
- 1.3 Anatomy of a MVED device
- 1.4 Organization and Scope of this book

Chapter 2. Historical Highlights, Applications, and Trends

- 2.1 Definition and Classification of Microwave Vacuum Electron Devices
 - 2.1.1 Vacuum Tube and VMD Triodes
 - 2.1.2 Slow Wave Devices Versus Fast Wave Devices
 - 2.1.3 Forward Wave/ Backward Wave Devices
 - 2.1.4 Linear Beam or O-Type Devices: TWT, BWO, Klystron, Twystron, Klystrode
 - 2.1.5 Crossed Field or M-Type Devices: Magnetron, CFA, M-Type BWO
 - 2.1.6 Historical Devices: Beam-Plasma-Types, E-Type, Adler tubes/Electrostatic and Parametric Cyclotron Wave amplifiers
 - 2.1.7 Maser-Type Devices: Gyrotrons, Gyroamplifiers, Orbitrons
 - 2.1.8 Peniotrons
 - 2.1.9 Intense Relativistic Electron Beam Devices:
- 2.2 History and Development
 - 2.2.1 Historical Landmarks in Microwave Tube History
 - 2.2.1.a MVEDs for the Military (Parker)
 - 2.2.2 Tube Development Status
 - 2.2.3 Vacuum Microelectronic Devices
- 2.3 Supporting Technologies
 - 2.3.1 Electron Emitters:
 - 2.3.2 Fabrication Techniques: Machining, Electroforming, Hobbing, EDM,.....LIGA (DVD details possible)
 - 2.3.2 Materials: Metals, Ceramics,....
 - 2.3.3 Structures
 - 2.3.4 Computational Tools
- 2.4 Tube Applications
 - 2.4.1 Current Applications:
 - Military/Defense, Commercial, Medical, Scientific
 - 2.4.2 Current Needs - Future MM Wave Applications
- 2.5 Summary
- 2.6 Acknowledgements
- References

SECTION II – MVED Types

Chapter 3. Klystrons

- 3.1 Introduction
- 3.2 Parameter space, current and projected.
- 3.3 Klystron advantages
- 3.4 Klystron disadvantages
- 3.5 Physics of operation
 - 3.5.1 Ballistic theory. Small-signal space charge theory. Slow/fast space

charge waves. Reduced plasma frequency calculation. Definitions and calculation of coupling coefficient and beam loading conductance, generalized for extended interaction. Stability calculations.

3.5.2 Stagger-tuning theory, poles and zeroes of gain function, broad-banding methods.

3.5.3 Multiple-beam klystron issues.

3.5.4 Sheet-beam klystron physics and calculations.

3.5.5 Large-signal theory and simulations.

3.5.6 "Intense Beam" klystrons

3.6 Examples of state-of-the-art klystrons

3.6.1 1-MW CW Varian X-band extended-interaction klystron (1966)

3.6.2 1.25 MW CW SLAC UHF klystron

3.6.3 200-MW SLAC S-band pulsed klystron (1995)

3.6.4 50-MW SLAC X-band pulsed klystron (1997)

3.6.5 10-MW Thomson L-band multiple beam klystron.

3.6.6 CPI (Canada)/NASA EIK

3.7 Summary

3.8 Acknowledgements

References

Chapter 4. Traveling Wave Tubes

4.1 Introduction

4.2 Physics of Operation

4.3 Major Advantages and Limitations

4.3.1 Compared with Other MVED Types

4.3.2 Compared with Solid State

4.4 Latest Examples

4.4.1 Space TWTs (incl. high data rate comm-refer to linearization)

4.4.2 Ultra-Broadband TWTs

4.4.3 Folded waveguide TWTs

4.4.4 Emission-gated (FEA) TWTs

4.4.5 High Perveance Helix TWTs

4.4.6 Ring-Bar & Coupled Cavity & Laddertron/Millitron TWTs

4.5 Microwave Power Module (MPM)

4.6 Future Opportunities for TWT Technology

4.7 Summary

4.8 Acknowledgements

References

Chapter 5. Gyro-Amplifiers

5.1 Introduction

5.1.1 Growing Applications for Gyro-Amplifiers

5.1.2 Physics of Operation

- 5.1.2.X Impact of Chaos and Relativity Correction
 - 5.1.3 Advantages and Limitations
 - 5.1.4 Accessible Parameter Space
- 5.2 Gyro-klystrons and gyro-twistrons
- 5.3 Gyro-TWTs
 - 5.3.1 TE₀₁ mode W-band gyro-TWT
 - 5.3.2 TE₂₁ mode gyro-TWT
 - 5.3.3 Ka-band gyro-TWTs (TE₀₁ mode & TE₁₁ mode)
 - 5.3.4 K. R. Chu NTHU ultra-wideband GTWT
 - 5.3.5 Denisov helical GTWT
- 5.4 Noise
- 5.5 New Concepts
 - 5.5.1 MIT (Temkin) QO gyro-amplifier, ref. PBG work
 - 5.5.2 Frequency multiplying gyro-amplifiers
 - 5.5.3 Gyro-peniotron
 - 5.5.4 Clustered-Cavity gyro-klystrons
- 5.6 Future Work and Applications
- 5.7 Summary
- 5.8 Acknowledgements
- References

Chapter 6. Crossed-Field Devices

- 6.1 Introduction
 - 6.1.1 Physics of Operation
 - 6.1.2 Advantages and Limitations
 - 6.1.3 Applications
 - 6.1.4 Accessible Parameter Space
- 6.2 Fundamental theory of crossed-field electron flow
- 6.3 Noise in Crossed-Field devices
- 6.4 Recent Noise and Phase-Locking Measurements
- 6.5 AFRL Simulation of High Power, Relativistic Magnetrons
- 6.6 Summary & Future Research Directions
- 6.7 Acknowledgements
- References

SECTION III – SUPPORTING TECHNOLOGIES

Chapter 7. Microfabricated MVEDs (sans cathodes)

- 7.1 Introduction
- 7.2 Overview of Microfabrication of Micro- & MM-Wave VEDs
- 7.3 Comparison of Microfabrication Methods and Tools
 - 7.3.1 Established (“Old”) Methods
 - 7.3.2 Relatively New Methods (LIGA, DRIE, ...)
- 7.4 Common challenges with microfabricated RF circuits
 - 7.4.1 Vacuum Issues
 - 7.4.2 Cavity Q’s / RF Circuit Losses

- 7.4.3 Dimensional Accuracy of Cavities/Circuits
- 7.4.4 Alignment and Registration of Circuit Components
- 7.4.5 Beam Transport / Magnetic Focusing
- 7.4.6 Heat Transfer CW and Pulse Heating
- 7.4.7 Cold Testing, Magnetic Measurements, Hot Testing
- 7.4.8 Packaging
- 7.4.9 Modeling and Simulation
- 7.5 Current Programs using Microfabrication
 - 7.5.1 95 GHz LIGA Klystrino (SLAC)
 - 7.5.1.1 Original Klystrino Research
 - 7.5.1.2 Alternative Klystrino/CCTWT LIGA devices
 - 7.5.1.3 Low Voltage, Lower Power Klystrino
 - 7.5.2 Folded-Waveguide TWT (U. of Wisconsin)
 - 7.5.3 CCR (Lawrence Ives), LIGA BWO
 - 7.5.4 1.2 THz MEMS Reflex Klystron (JPL)
 - 7.5.5 1.2 THz SU-8 Reflex Klystron (U. of Leeds)
 - 7.5.6 Agere triode work
- 7.6 Future Directions
 - 7.6.1 Lithographic Manufacturing with Multiple Modules on Single Substrate
 - 7.6.2 Microfabricated Electron Source and RF Circuit on Single Substrate
 - 7.6.3 Microwave Source, RF Components, and Load on Single Substrate
 - 7.6.4 Alternate materials for Microfabrication (iron, ceramic)
 - 7.6.5 Micro-Molding
- 7.7 Summary
- 7.8 Acknowledgements
- References

Chapter 8. Advanced Cathodes

- 8.1 Introduction
- 8.2 Technology Overview
 - 8.2.1 - ? -Oxide and Scandate Thermionic
- 8.3 Cathode Technologies
 - 8.3.1 Field Emitter Array Cathodes
 - 8.3.1.1 Introduction
 - 8.3.1.2 Potential and Challenges
 - 8.3.1.3 Theory of Field Emission Enhancement at Tips
 - 8.3.1.4 Carbon Nanotubes and Fibers
 - 8.3.1.5 Metallic Field Emitter Arrays
 - 8.3.1.6 Semiconductor Field Emitter Arrays
 - 8.3.1.7 Wide-Bandgap Materials
 - 8.3.1.8 Photo-Field Emission
 - 8.3.1.9 Other Field Emission Materials
 - 8.3.2 Thermionic Cathodes
 - 8.3.2.1 Introduction
 - 8.3.2.2 Theory of Thermionic Emission

- 8.3.2.3 History of Thermionic Cathodes
 - 8.3.2.4 Oxide Cathodes (progress)
 - 8.3.2.5 Scandate Cathode (progress)
 - 8.3.2.6 Other Thermionic Cathodes
- 8.3.3 Other Cathodes
 - 8.3.3.1 Ferroelectric
 - 8.3.3.2 Explosive Emission
 - 8.3.3.3 Negative Electron Affinity Photocathodes
 - 8.3.3.4 LaB6 Photocathode
 - 8.3.3.5 Dispenser Photocathodes
 - 8.3.3.6 Trioxide Thermionic Photocathodes
 - 8.3.3.7 Ferroelectric Photocathode
 - 8.3.3.8 Field Emitter Array Photocathodes
- 8.4 Electron Gun Technologies
 - 8.4.1 Pierce Gun
 - 8.4.2 Magnetron Injection Gun
 - 8.4.3 Whaley gun
 - 8.4.4 Rick Mako, multi-pactor gun
 - 8.4.5 Plasma Electron Gun
 - 8.4.6 High-Power Cusp Gun
 - 8.4.7 Ferroelectric Electron Gun
 - 8.4.8 Photocathode/RF Gun
- 8.5 Future Directions
- 8.6 Summary
- 8.7 Acknowledgements
- References

Chapter 9. Understanding Linearity (TWTs, klystrons, both communications and ECM, since not the same issues)

- 9.1 Introduction
 - 9.1.1 Basic definition of VE linearity
 - 9.1.2 Fundamental Issues: tradeoff with power, etc.
 - 9.1.3 Review of past VE work
 - 9.1.4 Comparison with non-VE devices
 - 9.1.5 Overview of chapter
- 9.2 Characterizing linearity
 - 9.2.1 Sources of nonlinearity
 - 9.2.2 Intermodulation distortions
 - 9.2.3 Conversion issues: AM/PM, etc.
 - 9.2.4 Measurement techniques
- 9.3 Theoretical principles
 - 9.3.1 Device theoretical modeling
 - 9.3.2 Phase, amplitude distortion
 - 9.3.3 Intermodulation distortion

- 9.3.4 Harmonic & distortion product generation and suppression
- 9.4 System requirements
 - 9.4.1 Communications
 - 9.4.2 Electronic countermeasures
 - 9.4.3 Other applications
- 9.5 Designing for linearity
 - 9.5.1 TWTAs
 - 9.5.2 Klystrons (IOT/CEA)
 - 9.5.3 Other devices: gyroklystrons, gyrotwts,...
 - 9.5.4 Impact on efficiency, dynamic range
- 9.6 Active techniques
 - 9.6.1 Predistortion
 - 9.6.2 Harmonic Suppression
 - 9.6.3 Serrodyne
 - 9.6.4 Feed Forward
- 9.7 Summary
- 9.8 Acknowledgments
- References

Chapter 10. Computational Modeling

- 10.1 Introduction
 - 10.1.1 Role of simulation in VE Design Process
 - 10.1.2 Overview of Computation Methodology
 - 10.1.2.1 Formulation Strategies
 - 10.1.2.2 Capabilities and Constraints
 - 10.1.3 Organization of chapter
- 10.2 Special Purpose Computational tools
 - 10.2.1 Steady state beam trajectory codes
 - 10.2.1.1 Introduction
 - 10.2.1.2 Established Codes (e.g., EGUN):
 - 10.2.1.3 Example Code: MICHELLE
 - 10.2.1.4 Collector Codes
 - 10.2.1.5 Sample Results
 - 10.2.1.6 Summary
 - 10.2.2 Cold Test Computational electromagnetic codes
 - 10.2.2.1 Introduction
 - 10.2.2.2 Established Codes (e.g.- HFSS)
 - 10.2.2.3 Example Code: CTLSS
 - 10.2.2.4 CTLSS Features Supporting MVED Design
 - 10.2.2.5 Summary
 - 10.2.3 Beam/wave interaction codes
 - 10.2.3.1 Code types (Include Tony Lin Quasi-analytic)
 - 10.2.3.2 Traveling wave amplifier (CHRISTINE, GATOR)
 - 10.2.3.3 Klystrons (consult Glenn Scheitrum)
 - 10.2.3.4 Telegraphists equations
 - 10.2.3.5 Importing field data from CEM codes

- 10.2.3.6 Space charge
 - 10.2.3.7 State of the art & Applications
 - 10.3 General Purpose Computational tools, Electromagnetic-PIC Codes
 - 10.3.1 Introduction
 - 10.3.2 MAGIC (David Smithe – Draft)
 - 10.3.3 MAFIA (Carol Kory- Draft)
 - 10.3.4 XOOPIC (John Verboncoeur - Draft)
 - 10.3.5 ICEPIC
 - 10.3.6 Examples (Lindsay Magnetron results)
 - 10.3.7 Summary
 - 10.4 Future Development
 - 10.4.1 Improved Algorithms
 - 10.4.2 Parallel Processing
 - 10.4.3 How to Techniques: Virtual Lab versus Real Lab
 - 10.4.4 Unified MVED Computational Environment (MMACE)
 - 10.5 Summary
 - 10.6 Acknowledgements
 - References

Chapter 11. Next-Generation Microwave Structures & Circuits

- 11.1 Introduction
- 11.2 Photonic Bandgap Structures
 - 11.2.1 General Theory of Photonic Bandgap Structures with Metal Lattices
 - 11.2.1.1 Finite Difference Algorithm Description
 - 11.2.1.2 Numerical Scheme of Eigenvalue Computation
 - 11.2.1.3 Results of Eigenmode and Band Gap Calculations for TM & TE modes
 - 11.2.1.4 Examples of PBG Cavity Designs
 - 11.2.2 Photonic Band Gap Resonator Gyrotron Experiment
 - 11.2.2.1 Introduction
 - 11.2.2.2 Design of PBG Gyrotron
 - 11.2.2.3 Experimental results
 - 11.2.2.4 Discussion and Conclusions
- 11.3 Quasioptical Open Structures
 - 11.3.1 Applications in vacuum electron devices
 - 11.3.1.1 Introduction
 - 11.3.1.2 Confocal Waveguides and Resonators
 - 11.3.1.3 Theory
 - 11.3.1.4 Design
 - 11.3.1.5 Confocal Waveguide Circuit
 - 11.3.1.6 Confocal Resonator
 - 11.3.1.7 HFSS Simulations and Analytic Results
 - 11.3.1.8 Conclusions
 - 11.3.2 Gyrotron Experiments with Confocal Structures
 - 11.3.2.1 Confocal Gyrotron

- 11.3.2.2 Confocal Gyrotron Amplifier
 - 11.3.2.3 Discussion and Conclusions
 - 11.3.3 The Road Ahead for Confocal Structures
- 11.4 Overmoded Fast Wave Circuits
 - 11.4.1 Overmoded resonant cavities
 - Input Coupling
 - 11.4.2 Overmoded traveling wave circuits
 - 11.4.3 Mode converting circuits
 - 11.4.4 Clustered cavity circuit concept
- 11.5 Multiple Beam Configurations
 - 11.5.1 Introduction: history, motivation
 - Klystrons, TWT's, Gyrotrons, etc.
 - 11.5.2 Advantages of multiple beam amplifiers (MBA)
 - 11.5.2.1 voltage reduction
 - 11.5.2.2 bandwidth enhancement
 - 11.5.2.3 size and weight reduction
 - 11.5.3 RF structures: low order mode; high order mode
 - 11.5.4 Current status of MBA's
 - 11.5.5 R&D issues: cathode life; beam transport; fabrication techniques
- 11.6 Smart Tubes
 - 11.6.1 Discussion of the "Smart Tube" Concept
 - 11.6.1.1 Introduction
 - 11.6.1.2 Motivation for giving an MVED "Intelligence"
 - 11.6.1.3 Essential Elements of a Smart Tube
 - 11.6.1.4 Availability of Necessary Components
 - 11.6.1.5 Possible Future Embodiments
 - 11.6.1.6 Conclusions
 - 11.6.2 Smart Tube Experiments to-Date
 - 11.6.2.1 Introduction
 - 11.6.2.2 Litton's Tuned Output Transformer
 - 11.6.2.3 New Mexico's Smart BWO
 - 11.6.2.4 MIT and other (CPI, Fukui Univ.) Smart Gyrotron Experiments
 - 11.6.2.5 Discussion and Conclusions
- 11.7 Conclusions & Future Directions
- 11.8 Acknowledgements
- References

Chapter 12. Innovations in VED Materials

- 12.1 Introduction
- 12.2 Applications of Diamond
 - 12.2.1 Electromagnetic windows
 - 12.2.2 Electrically insulating support rods
- 12.3 Advances in microwave absorbing dielectrics
 - 12.3.1 Applications of microwave absorbing materials in MVEDs
 - 12.3.2 Properties of absorber materials relevant to MVEDs

- 12.3.3 Microwave absorbing dielectrics based on aluminum nitride
 - 12.3.3.1 AlN-SiC microwave absorbing systems
 - 12.3.3.2 High thermal conductivity AlN-based microwave absorbing systems
- 12.3.4 Complex Permittivity Measurement Techniques for High Loss Dielectrics
 - 12.3.4.1 Room temperature, frequency-dependent measurements
 - 12.3.4.2 Temperature- and frequency-dependent measurements
- 12.4 Cooling techniques for high heat-flux metal structures
 - 12.4.1 Limitations of conventional cooling
 - 12.4.2 Cooling schemes involving boiling
 - 12.4.3 Porous metal cooling
- 12.5 Applications of pyrolytic graphite
 - 12.5.1 Manufacture, structure and properties of pyrolytic graphite
 - 12.5.2 Pyrolytic graphite collector electrodes
 - 12.5.3 Cathode modulation grids fabricated from pyrolytic graphite
- 12.6 Applications of rare-earth permanent magnets
- 12.7 Summary and Future Research Directions
- 12.8 Acknowledgements
- References

Chapter 13. Technologies for HPM Sources

- 13.1 Introduction
 - 13.1.1 Common Elements with Previous Chapters
 - 13.1.2 Ultimate in High Power
 - 13.1.3 Unique Aspects of HPM
 - 13.1.6 Overview of Chapter
- 13.2 Motivation and Background
 - 13.2.1 Motivation
 - 13.2.1.1 Shift in emphasis from single pulse to rep-rate
 - 13.2.1.2 NO MORE POOR VACUUM AND EXPLOSIVE EMISSION
 - 13.2.1.3 Parameter regime of interest
 - ~100 nsec's, rep-rate 100's hertz, ~ 1GW, L-band
 - Subject to change based on effects data
 - 13.2.2 Background of Field
 - 13.2.3 Sources
 - 13.2.3.1 Linear Tubes
 - 13.2.3.2 Crossed Field Tubes
 - 13.2.3.3 Fast Wave Tubes
 - 13.2.3.4 Relative Merits
- 13.3 Research Frontiers
 - 13.3.1 Materials
 - Interactions with electrons at high energy
 - 13.3.2 Advanced Experiments
 - 13.3.2.1 Cathodes

- 13.3.2.2 Collectors/Anodes
 - 13.3.2.3 RF Structures and Antennas
 - 13.3.3 Advanced Simulation
 - 13.3.3.1 Virtual HPM Device
 - 13.3.3.2 Massively Parallel Codes
 - 13.3.3.3 Visualization
- 13.4 Advanced Experimental Developments
 - 13.4.1 Cathodes
 - 13.4.1.1 Cesium Iodide
 - 13.4.1.2 Carbon Nanotubes
 - 13.4.1.3 3-D Child-Langmuir and Uniformity
 - 13.4.2 Collectors/Anodes
 - 13.4.2.1 Carbon Nanotubes
 - 13.4.2.2 Ultra-wide bandgap materials and coatings
 - 13.4.3 RF Structures and Antennas
- 13.5 Advanced Computer Modelling
 - 13.5.1 "Virtual Microwave Device"
 - 13.5.1.1 Correctly model material interactions
 - 13.5.2 Highly Non-Linear Phenomena (Including material interactions)
 - 13.5.2.1 Relativistic Magnetron
 - 13.5.2.2 Vircator
 - 13.5.2.3 RKA (?)
 - 13.5.2.4 MILO
 - 13.5.3 Visualization
- 13.6 Summary and Future Directions
- 13.7 Acknowledgements
- References

SECTION IV – Conclusions

Chapter 14. Emerging Applications and Future Possibilities

- 14.1 - Introduction
 - Motivation & structure of chapter
- 14.2 - Future Applications
 - 14.2.1 - Communications
 - 14.2.1.1 Space-based Communications
 - 14.2.1.2 Covert Communications
 - 14.2.1.3 Man-Portable Systems
 - 14.2.2 - Radar
 - 14.2.2.1 Advanced MM-Wave Radar
 - 14.2.2.2 Pulsed Radar ??
 - 14.2.3 – Materials/Chemistry
 - 14.2.3.1 Ultra-short-Pulse Applications
 - 14.2.3.2 High Average Power MVED IR Source Applications
 - 14.2.3.3 Microwave-assisted Plasma Chemistry

- 14.2.4 – and so on...
 - 14.2.4.1 MVED Medical Applications
 - 14.2.4.2 MVEDs for Advanced Accelerators
 - 14.2.4.3 MVEDs for Fusion Heating
- 14.3 - Defining Ultimate Expectations of Current Research Directions
 - 14.3.1 - MVE Sources
 - 14.3.1.1 Micro-MVEDS
 - 14.3.1.2 Multiple beam MVE sources
 - 14.3.1.3 MVE amplifiers with FEA cathodes
 - 14.3.1.4 Linearity and noise reduction
 - 14.3.1.5 MMPM
 - 14.3.1.6 Gyro-amplifiers (harmonic mult., high harmonic no., clustered cavities, overmoded, gain-bandwidth opt.)
 - 14.3.1.7 Quasi-optical MVEDs
 - 14.3.1.8 Sheet-beam klystrons
 - 14.3.2 - Supporting Technologies
 - 14.3.2.1 Microfabrication/MEMS
 - 14.3.2.2 Cathodes
 - 14.3.2.3 Multi-stage depressed collectors
 - 14.3.2.4 Thermal Management
 - 14.3.2.5 Materials (dielectrics, windows)
 - 14.3.2.6 Automated design using codes
 - 14.3.2.7 High Temp. Superconductors & MVE
 - 14.3.2.8 MVE-Driven Phased Arrays
- 14.4 - New Thrusts in MVE Research
 - 14.4.1 - Cold-Cathode MVEDs
 - 14.4.2 – MEMS-MEVD
 - Compact, high frequency sources and systems
 - 14.4.3 - Controlled Chaos in MVE sources
 - 14.4.4 – Nanotechnology & MVE
- 14.5 - Summary
- 14.6 Acknowledgements
- References

INDEX

ABOUT THE AUTHORS AND EDITORS

LIST OF STUDENTS

DVD (2-sided) –